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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,941	08/09/2001	Tamotsu Sugimoto	040679-1327	1997
22428	7590	04/07/2004	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			CLARKE, SARA SACHIE	
			ART UNIT	PAPER NUMBER
			3749	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/924,941

Applicant(s)

SUGIMOTO ET AL.

Examiner

Sara Clarke

Art Unit

3749

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 12, 26 and 30 is/are rejected.
- 7) ☒ Claim(s) 10, 13-25 and 27-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Please note that the art unit for this application has changed to 3749.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 11, 12, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Vestin et al. (WO 98/01702).

Vestin et al. discloses the invention as claimed including a passage 4, a catalyst 2, a heat exchanger 16, and a mixer 10.

With regard to the combustion of hydrogen (claim 1), limiting the combustion to "mild combustion" (claims 2, 3, 7, and 8), the flow rate control (claims 4 and 5), these limitations are considered statements of intended use and do not structurally differentiate the claimed apparatus from the prior art apparatus.

Regarding the recitation of a hydrogen gas supply in new claim 30, since air includes hydrogen gas, and blower 5 provides air, the structure of Vestin et al. necessarily includes a hydrogen gas supply. See the Handbook of Chemistry and Physics, page 14-19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vestin et al. (WO 98/01702) in view of Rostrup-Nielsen et al. (WO 99/13269).

Vestin et al. discloses the invention substantially as claimed with the exception of first and second electrodes, a corrugated sheet, and a catalyst supported on the sheet.

Rostrup-Nielsen et al. discloses first and second electrodes, a corrugated sheet, and a catalyst supported on the sheet. See Fig. 1a. The use of the corrugated sheet to support the catalyst provides for turbulence. See page 10. Separation of the two electrodes minimizes shorting across the electrodes. See page 11.

Both Vestin et al. and Rostrup-Nielsen et al. are analogous prior art since they are concerned with catalytic combustion.

Thus, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to provide the combustor of Vestin et al. with first and second electrodes, a corrugated sheet, and a catalyst supported on the corrugated sheet as taught by Rostrup-Nielsen et al. to provide for turbulence and to minimize shorting across the electrodes.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vestin et al. (WO 98/01702) in view of Coy (US 3580225).

Vestin et al. discloses the invention substantially as claimed with the exception of a heat exchanger having pipes extending between two walls.

Coy is analogous prior art since it discloses a heat exchanger for heating water

from combustion gasses. Coy teaches the use of a heat exchanger 25 having pipes 28 extending between two walls 29,30 for the purpose of heating water between the pipes.

Thus, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to provide the device of Vestin et al. with the type of heat exchanger taught by Coy to heat water with combustion gasses.

Allowable Subject Matter

Claims 10, 13-25, and 27-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 31 is allowed.

Response to Amendment/Arguments

Claim 1 has been and a new reference has been applied against it. However, to the extent that the argument at the bottom of page 11 of the response applies to the rejection of claim 1 as anticipated by Vestin et al., the examiner disagrees.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

As acknowledged by applicant on the last two lines of page 11, the use of hydrogen gas relates to the way in which the structure works. It does not differentiate

the invention structurally. Applicant has presented arguments but no actual evidence that the structure will not work as intended. Thus, since applicant has not properly rebutted the rejection of claim 1, and the prior art cited shows all of the claimed structure, the rejection is considered properly made.

The rest of applicant's arguments with respect to the prior art rejections have been considered but are moot in view of the new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

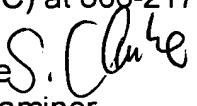
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Clarke whose telephone number is (703)305-9177. The examiner can normally be reached on Thurs. and Fri., 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached at (703)308-1935. The fax phone number for the organization where this application is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Clarke 
Primary Examiner
Art Unit 3749

March 26, 2004